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ABSTRACT

This handbook contains suggestions for the use of results from the New Mexico High School Proficiencies Examination (NMHSPE) and describes procedures for developing programs and planning intervention strategies. The information and guidelines will facilitate administrative action for program improvement through integration of the NMHSPE results and other evaluation data. The examination is part of the New Mexico Basic Skills Plan for statewide assessment of student proficiency for diploma endorsement. The examination is administered to all 10th grade students and, subsequently, to 11th and 12th grade students or new residents. Test items assess the skill areas of computation, identification of facts and terms, problem solving, reading and writing; and the content areas of community resources, consumer economics, government and law, and health. To insure the acquisition of basic skills, all goals, objectives, competencies, and skills are established at appropriate points in the curriculum; remediation is provided to students not meeting local criteria at the 10th grade checkpoint; all eligible students are included; writing skills appraisal is related to functional competence and equitable criteria; and consistent procedures are used in scoring. The suggested procedures following the examination are cyclic with the results providing major input on program and student outcomes. (CM)

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# New Mexico High School Proficiency Examination

## ADMINISTRATORS' HANDBOOK

NEW MEXICO STATE DEPARTMENT OF EDUCATION

Leonard J. Delayo
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# INTRODUCTION

The content of this brochure is directed to those individuals who are interested in using test results for program planning and improvement. The focus of the text is on articulation of results and related procedures for developing and planning intervention strategies. The intended readership includes: building principals, assistant principals, district administrators, and persons responsible for making decisions based on test results.

Although administration should be a team effort, few problems will be resolved or school improvements initiated unless the school administrator exercises leadership. Given proper administrative leadership, a school can do much to ameliorate its problems and improve educational services. It is the intent of this brochure to provide the necessary information and guidelines to facilitate administrative action for program improvement through integration of the New Mexico High School Proficiency Examination (NMHSPE) results and other evaluation data.

**Background Information**

The New Mexico High School Proficiency Examination is part of the New Mexico Basic Skills Plan (NMBSP), adopted in April, 1977, by the New Mexico State Board of Education. A fundamental aspect of this plan called for the development of statewide assessment of student proficiency to meet a performance requirement for a diploma endorsement. In partial fulfillment of this requirement, the State Department of Education initiated an objective proficiency examination for secondary students. The examination is administered to all tenth-grade students and subsequently to all eleventh- and twelfth-grade students or new residents of the state who have not met the standard for minimum performance on previous administrations of the examination.

The purpose of the examination is to measure each student's ability to apply the skills he/she has learned in school to realistic problems. The examination results are utilized as one basis for diploma endorsement considerations.

The New Mexico High School Proficiency Examination consists of test items which have been developed to assess the following **Skill Areas**: Computation, Identification of Facts and Terms, Problem Solving, Reading, and Writing. The five skill areas are assessed in the context of the following **Content Areas**: Community Resources, Consumer Economics, Government and Law, Occupational Knowledge, and Health.

Designed to better ensure the acquisition of basic skills by New Mexico students, the Plan requires school districts to:

- ENSURE that all goals, objectives, competencies, and skills are included at appropriate points in the local curriculum.
- ESTABLISH at least one checkpoint prior to the tenth grade to evaluate student progress toward achieving the required goals, objectives, competencies, and skills.
- PROVIDE remediation to students who do not meet local criteria at the checkpoint and to those who do not pass the NMHSPE at the tenth or eleventh grade.
- ENSURE that all eligible students are included in the program.
- ENSURE that all diplomas contain the required endorsement statement.
- USE topics for the Student Writing Skills Appraisal which relate to functional competence.
- DEVELOP and utilize equitable criteria and consistent procedures in scoring student writing for the appraisal.
- ENSURE that students, parents, and teachers are adequately informed of the goals, objectives, competencies, and skills of the NMBSP and NMHSPE.

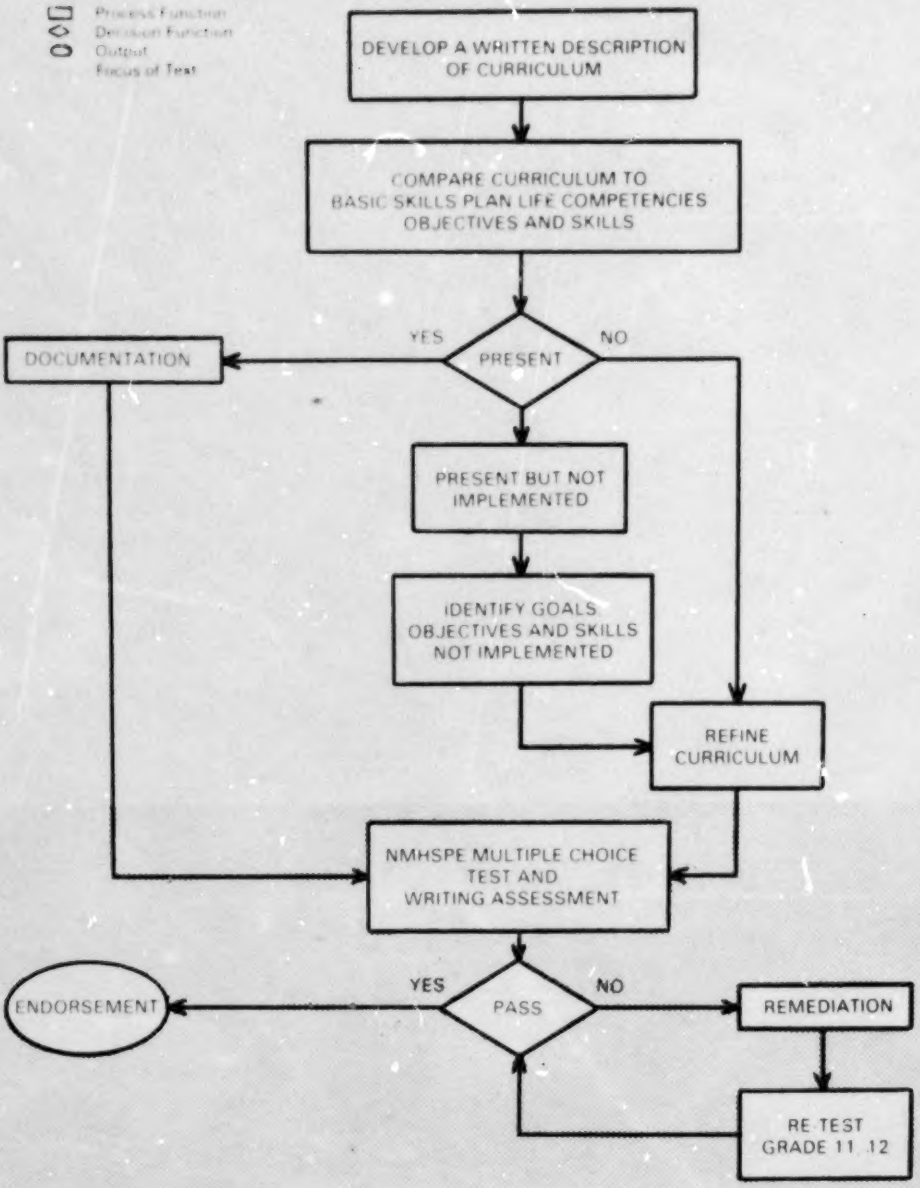
A more complete explanation of each of these requirements is contained in Chapter 1 of the New Mexico Basic Skills Plan Requirements and Objectives. Copies of this document may be obtained upon request through the Director of Elementary and Secondary Education, New Mexico State Department of Education.

Suggested procedures for local curriculum and remedial program planning as presented in this document are summarized in Figure 1 on the following page.

The remaining portion of this handbook will focus on suggested procedures and practices following administration of the New Mexico High School Proficiency Examination. Ideally, the entire process would become cyclic in nature with the NMHSPE results providing major input on program and student outcomes. This publication will not address procedures related to the Writing Assessment.

# NEW MEXICO BASIC SKILLS PLAN

## Figure 1



## ANALYZING TEST RESULTS

### *How Did We Do?*

Your test results have arrived. Teachers, students, board members and parents are interested in knowing the outcomes. As a school administrator, you are responsible for interpreting and reporting the NMHSPE results. The procedure suggested below was designed to facilitate this task.

STEP 1: ANALYZING STUDENT PERFORMANCE

- Locate the ADMINISTRATIVE SUMMARY form for each content and skill section of the examination and sort as to grade level. There will also be an **overall** summary for each grade level.

- Draw a line **above** the cut-off score (523) on the overall ADMINISTRATIVE SUMMARY for each grade level as shown below:

| | | | |
|---|---|---|---|
| 84 | 521 | 21 | 38 |
| 85 | 523 | 23 | 50 |

- Refer to workshop training materials provided by SDE for a review of column descriptions and procedures for locating specific kinds of information.

- Using the information found on these report forms, prepare a performance summary. The PERFORMANCE ANALYSIS form shown on page 5 may be used as a guide for organizing the information. You may wish to prepare a narrative statement to describe your school's performance. Special Education students are reported on a separate ADMINISTRATIVE SUMMARY report form.

## PERFORMANCE ANALYSIS

1. How many students took the examination? _____
2. How many students **passed** the examination? _____
3. How many students **failed** the examination? _____
4. What percentage of the students taking the examination does this represent? % Passed _____ % Failed _____
5. What is the performance breakdown by grade level?

| | | | |
|---|---|---|---|
| Grade 10: | % Passed | % Failed | # of students to remediate |
| Grade 11: | % Passed | % Failed | # of students to remediate |
| Grade 12: | % Passed | % Failed | # of students to remediate |

6. How many Special Education students (grade code "O") received scores above/below the cut-off point? _____ above _____ below
7. How does the **median** performance for each grade level compare with the cut-off score? (Check if above or below)

| | | | | |
|---|---|---|---|---|
| Grade 10: | Median Score | 523 cut-off | above | below |
| Grade 11: | Median Score | 523 cut-off | above | below |
| Grade 12: | Median Score | 523 cut-off | above | below |

8. Does the average performance show an increase at each grade level? (Look for increases in percentages and/or an increase in the average score.)
9. Is the number of students (as reflected in the cummulative percent or percentile columns) below the cut-off score too high in terms of district standards? _____ above _____ below

***What are the Implications of the Findings?***

STEP 2: INTERPRETING THE FINDINGS

- Review the information summarizing school performance and prepare a list of recommendations for committee consideration or board reporting.

- Next to each recommendation write your reason for including it in the list.

Example: Overall Performance

| Recommendations | Rationale |
|---|---|
| Give priority to establishing a plan for remediation. | 30 percent of the students tested failed to score at or above 523. |
| Review curriculum for possible changes in instructional emphasis. | Large percentages of eleventh- and twelfth-grade students are unable to pass, even after repeated testing. |
| Review programs provided by other schools in the districts who have comparable student populations. | District standard is that the cut-off score will be at or below the 8th percentile. School results report the 10th percentile. |

- Draw a line above the cut-off score on each of the ADMINISTRATIVE SUMMARY report forms. Because all test items are on the same scale, the cut-off score 523 obtained for the total test score can be applied to content and skill sub-scores for purposes of comparison. The reliability or accuracy of these sub-scores, however, is **less** than that of the total score due to the smaller number of items used to compute them. Conclusions about achievement of individuals should be made with caution for this reason. However, you may find this a helpful way to compare performance across sections of the exam and to analyze the data by skill and content.

- Repeat the above performance analysis process for each of the content and basic skill report forms.

Example: Content specific performance

| Recommendations | Rationale |
|---|---|
| Review government courses and consider purchasing supplementary materials related to application skills. | When the cut-off score (523) is applied to each content area, a low performance percentage was recorded on the government section at all grade levels. |

***Based on the Findings, What Curriculum Changes Should our School Consider?***

STEP 3: DEVELOPING A PROGRAM IMPROVEMENT ACTION PLAN

By analyzing schoolwide performance by grade level, you have been able to identify **specific** groups of students needing assistance by skill and content. Further, *the recommendations you have formulated can be supported by actual test data.* A second report form called the CURRICULUM MATCH report has been designed to assist local administrators in curriculum development and improvment. This report provides an empirical means for analyzing performance by objective. The following procedures for analyses are suggested:

- Locate the CURRICLUM MATCH report forms. There will be one report for each of the five content areas tested.
- Using the CURRICULUM MATCH REPORTS, you may wish to organize all data on **one** form to facilitate analyses of results. A suggested format for analyzing school performance across objectives is presented on the following page.
- Fill in the Observed Percent Correct and Deviation for each item on the Administrators' Decision-Making Matrix.
- Decide upon criteria to define "strength" (S) or "weakness" (W). For example:

  Criteria: An *observed* performance percentage of 65 percent or above **may** be used to identify a program strength when the deviation from the *expected* percent correct is smaller than -10 percentage points.

# ADMINISTRATORS' DECISION-MAKING MATRIX

Content _____

School _____ School _____ School _____

| ITEM NO. | OBJ. | SKILL DESCRIPTOR | BASIC SKILL | Obs. % | Dev. | S | W | Obs. % | Dev. | S | W | Obs. % | Dev. | S | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WHERE, WHEN AND HOW TO SEEK MEDICAL HELP** | | | | | | | | | | | | | | | |
| 10 | 1D | Filling in Forms-Patient Info. | W | | | | | | | | | | | | |
| 02 | 1A | Contagious Diseases-Complications | I | | | | | | | | | | | | |
| 01 | 1A | Figuring Elevated Body Temp. | C | | | | | | | | | | | | |
| 11 | 1A | Recognizing Signs of Illness-Temp. | I | | | | | | | | | | | | |
| 29 | 1B | Identifying Services-Public Health | I | | | | | | | | | | | | |
| 26 | 1B | Selecting Appropriate Physician | I | | | | | | | | | | | | |
| 09 | 1C | Following Directions-Prescriptions | P | | | | | | | | | | | | |
| 03 | 1D | Determining Drug Intake | C | | | | | | | | | | | | |
| 14 | 1D | Writing Notes-School Absence | W | | | | | | | | | | | | |
| 04 | 1D | Role of Physician-Dentist | I | | | | | | | | | | | | |
| 27 | 1D | Determining Need for Medical Help | P | | | | | | | | | | | | |
| **PERSONAL HABITS THAT PROMOTE GOOD HEALTH** | | | | | | | | | | | | | | | |
| 07 | 2A | Health Maintenance-Fluid Consumption | I | | | | | | | | | | | | |
| 05 | 2A | Maintaining Health-Dental | I | | | | | | | | | | | | |
| 15 | 2A | Living With a Physical Disorder | I | | | | | | | | | | | | |
| 23 | 2B | Maintaining Health-Diet | P | | | | | | | | | | | | |
| 31 | 2B | Using Labels for Information-Food | R | | | | | | | | | | | | |
| 08 | 2B | Using Charts for Meal Planning | C | | | | | | | | | | | | |
| 06 | 2B | Determining Food Intake | C | | | | | | | | | | | | |
| 18 | 2C | Using Written Records-Immunizations | R | | | | | | | | | | | | |
| 24 | 2C | Recognizing Potential Hazards-Alcohol | I | | | | | | | | | | | | |
| **PRINCIPLES OF PLANNING AND RAISING A FAMILY** | | | | | | | | | | | | | | | |
| 30 | 3A | Family Planning-Genetic Counseling | P | | | | | | | | | | | | |
| 12 | 3C | Using a Clock to Determine Bedtime | C | | | | | | | | | | | | |
| 16 | 3D | Using Charts-Determining Sleep Need | R | | | | | | | | | | | | |
| **DEALING WITH POTENTIAL HAZARDS AND ACCIDENTS** | | | | | | | | | | | | | | | |
| 25 | 4B | Following Directions-Fire Alarm | R | | | | | | | | | | | | |
| 19 | 4C | Giving First Aid-Artificial Resp. | C | | | | | | | | | | | | |
| 22 | 4A | Recognizing Potential Health Hazard | P | | | | | | | | | | | | |
| 28 | 4A | Recognizing Health Hazards | I | | | | | | | | | | | | |
| 13 | 4D | Seeking Help-Medical Emergencies | P | | | | | | | | | | | | |

- Apply the criteria across objectives and place a checkmark in the appropriate column (S or W).

- Complete the process for each of the five content areas. You now have identified school strengths and weaknesses on two criteria based on test data.

- Identify strong content areas that reflect existing school programs or recent areas of staff development.

- List weaknesses and formulate a recommendation based on findings. Remember to include a rationale.

- Look for relationships among identified strengths and weaknesses.

- Write a summary report of findings and recommendations for reporting results to staff, parent, community groups, board or district personnel.

***What Reporting Procedure Would be Most Useful for my Staff?***

STEP 4: PRESENTING NMHSPE RESULTS FOR PLANNED CHANGE

In order for change to take place there must be a perceived need. Although test results are only one vehicle for change, they are powerful in that they serve to focus attention on specific skills in specific content areas. Because change is a process, not an event, it is generally brought about in phases. Presentation of the performance data could serve to identify the problem and the need for improvement. As presented below, this is the first phase of planning change.

**Phase 1 - Identifying the Problem**

- PRESENT the NMHSPE results to school staff.

- DISCUSS how test results relate to the achievement of the educational objectives of the school or departments within the school.

- REPORT strengths and weaknesses, as indicated by the test data.

- IDENTIFY needed improvements based on findings.

**Phase 2 - Diagnosing the Nature of the Problem**

- BRAINSTORM to identify likely causes related to the problem area(s).
- LIST the three most likely causes.
- LIST three ways the problem could be ameliorated.

**Phase 3 - Consideration of Alternatives**

- CHOOSE the three best proposals to improve the situation.
- APPOINT committees to study implementation and impact of each stated alternative.

**Phase 4 - Selection of the Best Alternative**

- REPORT committee findings and recommendations.
- DISCUSS alternatives.
- SELECT best approach.

**Phase 5 - Implementation**

**Phase 6 - Evaluation of the Outcomes**

***What Testing Issues and Results will Administrators Report to Parents, Teachers, Counselors, and Local School Boards?***

School administrators will be reporting NMHSPE results to a variety of groups and will need to prepare different presentations depending upon the particular interest of each group. For example, counselors may want diagnostic/ interpretive kinds of information while school boards may want performance data related to specific instructional programs.

The following section has been designed to assist administrators in identifying some of the issues various groups may find most interesting and in anticipating relevant questions.

ISSUES RELATED TO QUESTIONS LOCAL SCHOOL BOARDS MAY ASK:

- historical perspective of the State testing program
- test design and development
- local involvement
- curriculum match process
- relationship of existing instructional program to test content
- districtwide performance
- statewide performance for comparison (pass/fail data)
- cultural bias considerations
- district remedial design
- cut-off score determination
- procedures for use of test results for curriculum improvement

ISSUES RELATED TO QUESTIONS TEACHERS AND COUNSELORS MAY ASK:

- reporting results to parents and students
- technical issues related to score interpretation
- curricular change issues
- remedial design plan
- cultural differences and special education needs
- ways to report performance
- techniques for preparing students for the examination
- working with students with special needs

ISSUES RELATED TO QUESTIONS PARENTS MAY ASK:

- the New Mexico Basic Skills Plan requirements
- specific competencies required for diploma endorsement
- specific content and skills assessed
- who decided upon these competencies and why
- at what grades the test is given and how many times the student can take the test in order to pass
- what score is required to pass and how it was determined
- what is being done to help students who did **not** pass the examination
- cultural bias considerations in test development and scoring
- how parents might help their child prepare for the exam
- what alternatives are available to students who are unable to pass the test

ISSUES RELATED TO QUESTIONS COMMUNITY GROUPS MAY ASK:

- cultural concerns
- defining endorsement in terms of competence
- existing programs supporting test content
- local performance standards and statewide performance
- percentages of students who will not get a high school diploma or seal because they failed to meet course requirements in addition to failing the state examination.

## SAMPLE RESPONSES TO TECHNICAL ISSUES

Listed below are some questions you may need to address when discussing or reporting test information of a technical nature. Additional information is also available in the workshop training materials distributed earlier in the year.

### *Why Were the Scores From Previous Examinations Equated?*

The purpose of equating test scores is to ensure that the same level of achievement is measured. Because it is difficult to create two different test questions which measure the same skill and are exactly equal in difficulty, it is inevitable that subsequent versions of the same test will differ in difficulty. When the scores of two students of equal achievement on different test forms are compared, it is found that the student assigned the test with more easy items will have a higher score. To avoid this problem, statistical equating methods are used to avoid discriminating against those students who took the harder test. For example, a score of 80 out of 100 on an easy test may be determined to correspond to a score of 70 out of 100 on a more difficult version of the test. Students receiving these scores are considered to have demonstrated equal levels of achievement.

Although previous forms of the New Mexico High School Proficiency Examination were very close in difficulty, for purposes of equating, 65 percent correct on the 1979-80 version was chosen as the base score and all other test forms including NM4 were equated to it. This process is necessary to ensure that while the percentage correct may vary, the cut-off score will always identify the same level of achievement.

### *Were Cultural and Regional Differences Taken into Consideration?*

Many factors affect a student's ability to respond to a question. A question can be defined as biased when it contains offensive language or stereotypes. A question is also biased when persons who are otherwise equal in achievement level but have different group memberships differ significantly in their choice of the correct answer primarily due to reasons related to group membership. The first type of bias is often identified by inspection. The second type is determined statistically after administration of the test.

The questions in the NMHSPE were analyzed for **both** types of bias. A small number of items were determined to be affected by the second type of bias. The items were eliminated from scoring to ensure the fairness of the test scores, and the causes of the difference in responses are being investigated.

***How Is This Different From Other Testing Programs?***

The New Mexico High School Proficiency Examination differs from a conventional testing program in the following ways:

- scores are not dependent upon a unique set of items and the system allows for items to be drawn from an item bank so tests are more representative of the instructional program
- score interpretation is not dependent upon the performance of an external group of students so scores represent learning outcomes resulting from a defined set of instructional objectives
- a score is dependent **only** upon an individual's ability in relation to the difficulty of the items
- this system provides a means of assessment that is fair to all students
- a score expressed as a **Measure on Scale** that carries meaning relative to the instructional program it measures
- a **Measurement Quality** index that provides a means for determining the degree of confidence one can place in the score **(Measure on Scale)**
- a definition of individual performance in terms of degree or probable percent of mastery for each skill area
- test results that allow for measuring longitudinal growth patterns of individuals who have repeated testing as well as group trends
- a system for detection of specific response patterns among groups of students with similar learning disabilities
- a system that provides feedback on program effectiveness relative to learning outcomes

***What Does the Term "Mastery Level" Mean in Relation to Student Performance?***

Under the NMHSPE, mastery is synonymous with the probability of answering an item correctly at a specified difficulty. The **Measure on Scale** represents a 50 percent probability that the student can answer items of that difficulty. Easier items with a lower difficulty have a higher probability of being answered correctly. Conversely, more difficult items have a lower probability of being answered correctly. For example, a student with a **Measure on Scale** of 550 would be expected to answer items of that difficulty with 50 percent accuracy, but might answer a harder item, say at 600, only 1 out of 4 times.

***What Does the Term "Expected" Mean?***

The term "expected" is related to the concept of mastery and is used to describe how well the student's response pattern fits the model. This implies that a student would have a higher probability or would be "expected" to miss those items which are above his **Measure on Scale**.

On the CURRICULUM MATCH report, the "expected percent correct" is **not** based on a norm-referenced group. The values in this column are generated by computing the likelihood of each student passing the item, then summarizing it and taking the average to determine an expected percent correct. This is determined by the distribution of your students in relation to the difficulty of all items on the test.

***Is the Measure on Scale the Student's Score?***

The student's **Measure on Scale** is more than simply a score. Technically, a score represents the number of items a student got right on the test. A student's **Measure on Scale**, although derived from the number of items answered correctly, represents a position on an equal interval scale which can be used to identify a set of acquired skills. In effect, a **Measure on Scale** represents not only the student's score but his position relative to a larger set of objectives.

***What is Meant by Probable Range?***

Due to the imperfect nature of all types of measurement, no score should be viewed as an absolute. The probable range represents the score areas where we would expect a student's score to fall given repeated testing within the same instructional context.

***What is Meant by Measurement Quality?***

**Measurement Quality** is a number that represents the extent to which the student responds in an expected pattern of getting easy items correct and more difficult items wrong. The degree of departure from 100 represents increased possibility of an invalid measure of performance. A low Measurement Quality (88 or below) may be attributed to:

- gaps in instructional experiences due to excessive mobility or repeated absence
- copying/cheating or guessing during the exam
- developmental or learning deficiencies such as inability to deal with abstract concepts, part-to-whole relationships or interpretation of visual information
- erratic performance due to emotional factors related or unrelated to the test situation
- random errors, such as mismarking or skipping

In addition to the above, it is important to note that Measurement Quality tends to be more unstable as the number of test items decreases. For this reason low Measurement Quality may not always indicate a true problem in a student's overall response to the test, but should warrant further investigation. Careful consideration of **all** factors related to the testing situation is advisable.